USGS

WATER RESOURCES RESEARCH GRANT PROPOSAL

Project ID: 2006AZ149B

Title: An Investigation in the Upper Santa Cruz River 2005 Riparian Vegetation Die-off

Project Type: Research

Start Date: 03/01/2006

End Date: 02/28/2007

Congressional District: 7th

Focus Categories: Wetlands, Surface Water, Drought

Keywords: Santa Cruz River, Riparian Area, Vegetation Die-off

Principal Investigator: Orr, Barron J. (University of Arizona)

Federal Funds: $11,940

Non-Federal Matching Funds: $27,523

Abstract: The Upper Santa Cruz River riparian corridor is integral to the ecology, culture, and economy of Santa Cruz County, Arizona. It recharges the aquifers upon which a community of 30,000 residents relies, it mitigates floods and erosion, it provides habitat for migrating and resident wildlife, and it supports local farming and ranching. A dramatic change is taking place in this corridor. Since approximately March of 2005, a significant fraction of the riparian trees and upland mesquite bosques along a 10-mile stretch of river have been dying for unknown reasons. Numerous factors, including climatic impacts, degraded water quality, and disease, have been proposed as elements that may be contributing to the demise of the riparian corridor's trees. Given the significant importance of the riparian area and associated groundwater tables to the current and future health of this region, it is imperative to investigate the cause of the die-off in order to prevent mortality spread into nearby regions and to restore the corridor to a functioning and stable state. In a larger sense, the die-off is an indication that the balance of the ecosystem has recently shifted, and the future direction of water management will need to incorporate this shift into decision-making processes. As a preliminary step in this direction, this project will integrate geospatial and temporal analysis of historical photography and satellite imagery,

basic water quality analysis and tree pathology testing to understand the context and potential causal factors which may provide insight into this sudden mortality.

U.S. Department of the Interior, *U.S. Geological Survey*
URL: http://water.usgs.gov/wrri/06grants/2006AZ149B.html
Maintained by: John Schefter
Last Updated: Wednesday, September 06, 2006